GAZING INTO THE CRYSTAL BALL TOGETHER: WARGAMING AND VISUALIZATION FOR THE COMMANDER AND STAFF

A MONOGRAPH
BY
Major John E. Frame
Military Intelligence

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School of Advanced Military Studies
United States Army Command and General Staff College
Fort Leavenworth, Kansas

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MAJ JOHN E. FRAME, USA

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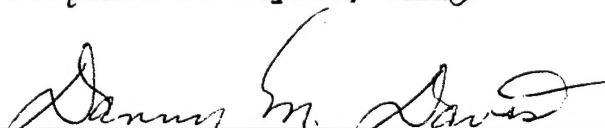# SCHOOL OF ADVANCED MILITARY STUDIES

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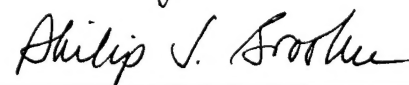*Commander and Staff*

Approved by:

_____ Monograph Director
LTC Clarence E. Taylor, MMAS

_____ Director, School of
COL Danny M. Davis, MA, MMAS   Advanced Military
                                        Studies

_____ Director, Graduate
Philip J. Brookes, Ph.D.   Degree Program

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ABSTRACT

GAZING INTO THE CRYSTAL BALL TOGETHER: WARGAMING AND
VISUALIZATION FOR THE COMMANDER AND STAFF by MAJ John E.
Frame, USA, 52 pages.

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The monograph first describes the historical
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The monograph concludes that the wargaming doctrine
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Draft manuals (1993 and 1996) have shifted the primary
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and roles are not described for the commander.
Consequently, commanders rarely wargame with the staff.
Common vision can not be produced without the commander and
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I. INTRODUCTION

Throughout the history of warfare, commanders have sought to develop an accurate picture of battle before it occurred. Understanding the current and future battlefield situation gave one a clear advantage over an opponent. Sun Tzu, the classical military theorist, described the early understanding of this truth in the year 500 B.C.:

> "...to estimate the enemy situation and to calculate distances and the degree of difficulty of the terrain so as to control victory are virtues of the superior general. He who fights with full knowledge of these factors is certain to win; he who does not will surely be defeated."[1]

Battlefield commanders prior to the nineteenth century tried to develop this insight themselves. With the aid of a small staff, the commander personally developed his own operational plans and directives. Frederick the Great, like most commanders of his era, used his staff primarily to manage administrative and logistical details.[2]

The growth of national armies in the early nineteenth caused a leap in the magnitude of operations. Increasing complexity forced commanders to give more responsibility for operational planning to their enlarged staffs. Staffs in both Prussia and France performed new tasks of developing and analyzing courses of action.[3]

The change in planning responsibilities presented a new challenge. Commanders and staff were required to develop techniques that ensured the many hands and minds involved in the planning process were seeking the same outcome, planning

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complimentary operations, and issuing supportive directives.
Previously, the commander developed his own understanding of
the relationship between his force and the enemy on the
terrain where operations were to be conducted. The change
in methodology dictated the commander construct and
additionally convey his vision to a staff that was now
responsible for development of detailed plans and orders.[4]

The increase in units and duration of operations also
required a change in planning techniques. The sequential
nature of the new and larger operations required a step by
step look at the expectations of the battlefield. The
Prussian Army began to use *Kriegsspiel*, or wargaming, as a
training and planning tool in the 1920s.[5]

Wargaming

Wargaming is a process that plays out the enemy and
friendly actions of the battle. Commanders use this process
to assist them in visualizing concepts for battle, and
identifying likely battlefield decisions. Staffs use the
results of wargaming to develop detailed plans and orders.
United States Army Field Manual 101-5, Staff Organization
and Operations, Final Draft 1996, defines wargaming as:

> "   a disciplined process with rules and steps which
> attempts to visualize the flow of a battle, given
> friendly dispositions, strengths, and weaknesses; enemy
> assets and probable COAs; and the characteristics of
> area of operations."[6]

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Wargaming is a process that is performed using two different, but related, methods. First, there is a mental method where individuals conduct visualization episodes with little or no physical props or representations. Commanders have traditionally used this type to analyze available courses of action.[7]

The second type of wargaming is a physical method that includes a complete representation by figures or symbols of the action being visualized by the participants. Staffs made this method popular as they became involved in the development and analysis of courses of action. The modeling of forces and the terrain allowed the participants to develop the same vision of the battle. As battle and operations became larger and more complex, physical wargames became increasingly popular as a tool to help understand the coming battle.[8]

Wargaming is a routine component of U.S. Army tactical planning. U.S. Army commanders initially used mental wargaming to analyze and select a course of action. In the late 1980s, wargaming further evolved into a synchronization activity for the commander and the staff. Current draft doctrinal manuals describe the purposes, method and responsibilities of each staff member during the wargaming process using a physical method. However, these same draft manuals give only a vague description of the commander's involvement in wargaming.[9]

The use of wargames to develop detailed and synchronized plans demands a sharp image of the expected battlefield. It is the most important act the staff performs during the planning process. The expansion of wargaming requires a clear doctrinal description of the purpose, recommended methods, required participants, and the role of the commander.

Battle Command

Battle command was introduced to the U.S. Army after the Cold War ended.[10] It highlights the enduring dynamics of the art of command. Battle command includes visualization tasks the commander must perform during the Military Decision Making Process (MDMP)[11]. The commander's visualization guides the development of plans and orders. It is communicated to produce a common reference for operational planning and execution.

Developing a common vision of the battlefield is critical for today and tomorrow's armed forces. The difficulties presented by dispersion and the likely disruption of communications demand a clear and common vision. Changes in the nature of warfare continue to modify the procedures for the planning and execution of operations. The short amount of time normally available to commander's and their staff necessitates efficiency in procedures (when do we have the luxury to do it a second time). Additionally, participation in joint and combined operations is

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increasing. These operations multiply the difficulty in developing common understanding of operational concepts between services and coalition partners.

The purpose of this monograph is to determine the effectiveness of the U.S. Army wargaming doctrine in developing a common vision between the commander and staff. The monograph will establish the necessity for development of common vision between the commander and staff. It will evaluate the purposes and use of wargames during planning to determine whether the commander and the staff must wargame together to achieve a common vision.

FM 101-5, Staff Organization and Operations, which describes staff procedures, will be used as the base doctrinal publication. Additionally, Center for Army Lessons Learned (CALL) bulletins and reports will be reviewed to determine variance in methods and techniques.

The monograph first describes the development of U.S. Army planning doctrine and presents a detailed discussion of battlefield visualization. A review of published and draft planning and wargaming doctrine follows to determine the prescribed role of commanders and staff in the wargaming process. Finally, analysis and conclusions determine the suitability of current wargaming doctrine to achieve battle command objectives.

II. HISTORICAL DEVELOPMENT OF WARGAMING

The United States Army's staff composition and procedures are based on the French and Prussian armies' staff organization of the early 1800's. These armies placed great importance on assembling the staff and defining the procedures to support the increased size of armies and the battlefield.[12]

The formalization of staff organization and functions was defined by two French Army officers. Pierre Alexander Berthier, Napoleon's chief of staff (Army of Italy-1796), began by recording standard procedures for how his headquarters staff would operate. His work formed the platform for the building of standardized staffs in Europe and the United States. The coordinating staff of a U.S. Army headquarters is organized and functions very much the way Berthier described it in 1796.[13] Lieutenant General Paul Thiebault, an adjutant general for the Army of the Republic, produced a consolidated staff manual that furthered Berthier's writings in 1800. His manual was translated into Spanish, Russian, English, and German shortly after its publication and was widely read by European military thinkers.[14]

The U.S. Army Military Decision-making Process(MDMP) has its roots in the Prussian Army's procedures. The Prussians developed a systematic and logical approach to solving military problems and decision-making. This

formalization of the planning process was intended to improve battlefield success. The increased size of the army in the early 1800s had caused a heightened demand for leaders and staff officers. The Prussians acknowledged there were not enough geniuses to fill all the new command and staff requirements.[15] Standardized procedures served to improve the quality and speed of the staff support to the commander.

The U.S. Army reorganized staffs and formalized procedures much later than the Prussians and the French. It was not until the close of the American Civil War (mid-1860s) that noticeable changes in the organization and responsibilities of the staff were introduced.[16] Early in the war, commanders still relied on staff officers to manage administration and logistics. Both union and confederate commanders personally analyzed then developed their own operational plans.[17] U.S. Army staff procedures were not formalized until the first decade of the twentieth century.

In 1909, Captain Roger S. Fitch wrote Estimating Tactical Situations and Publishing Field Orders while serving at the Infantry and Cavalry school at Fort Leavenworth, Kansas.[18] His document is a description of the estimate of the situation taught by the school. The Army was quick to pick up on Captain Fitch's work and included portions of his document in Field Service Regulations the following year.[19]

FM 101-5, Staff Organization and Operations is the U.S. Army's current doctrinal manual for estimates and decision-making.[20] The first FM 101-5 appeared in 1932 and offered a decision-making process centered on the estimate of the situation that had emerged from Fort Leavenworth. The estimate process that served as the cornerstone of FM 101-5, is a manifestation of Sun Tzu's famous proverb: "Know the enemy, know yourself; your victory will never be endangered. Know the ground, know the weather; your victory will then be total."[21] It is an investigation of the expected battlefield situation in accordance with the axiom dictated some 2500 years ago. There have been eight subsequent versions of this manual since it was first published in 1932.[22]

The current edition, dated May 1984, reflects the enduring thoughts developed in earlier versions. While changes and modifications to procedures have been made throughout the manual's history, the estimate of the situation has remained virtually unchanged as a concept since 1932. The estimate has always been the responsibility of the commander. The staff assisted the commander by providing additional information in their area of responsibility and expertise (staff estimates). The commander's estimate provided a systematic method of determining an appropriate course of action.

Even though the term visualization does not appear in the 1932 manual, estimates were expected to consider the

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enemy's most probable course of action prior to development of a friendly plan. The 1940 edition introduced the concept of visualization in estimating the outcome of battlefield actions.[23] Increasing specificity in estimation were discussed in successive revisions of the manual in the 1950s and 1960s. Each of these changes required more and more detailed images, but did not change the concept of visualizing the outcome of battle.

The 1968 edition was the first to use the term wargaming. The manual describes the wargaming process as a detailed analysis of sequenced actions expected to be seen on the battlefield. Wargaming is introduced as a mental process performed by the commander to develop and analyze the expected battlefield actions and decisions.[24] The staff did not participate in the process with the commander nor did they perform wargaming separately. This description of the wargaming process is in the current edition of FM 101-5. The process remains unchanged and the commander is the sole participant.[25]

FM 101-5 does not describe the physical method of wargaming that has developed over the last two centuries. The Prussians used physical wargames to train commanders and staffs beginning in the 1820s. By the 1860s, the successes of wargaming in training led to its use as a decision aid on the battlefield. Prussian commanders used wargaming to visualize outcomes and select a course of action for battle.[26]

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Over twelve years have now passed since the last publication of FM 101-5. This is the longest period between versions of this key staff document since its introduction in 1932. Two final drafts (1993 and 1996) have been circulated during the interim period. They described significant changes to staff activities during the Military Decision-making process. Staffs are fully involved in course of action development and analysis. They are the lead actors in wargaming using a physical method. Commanders focus on developing and communicating an intent and concept to guide staff planning. Visualization, a key battle command dynamic, is performed by the commander to produce an intent and concept.[27]

III. BATTLEFIELD VISUALIZATION

Battle command is "the art of motivating and directing soldiers and their leaders into action to accomplish missions."[28] It was introduced after Desert Storm to highlight important leadership tasks and skills to an Army expected to operate at high tempo and perform many different missions.[29] Battle Command Battle Lab Pamphlet 2.1 prescribes six dynamics of battle command: leadership, decision-making, information assimilation, visualization, conceptualization, and communication.[30] Visualization is described as:

> "...the act of forming a mental picture of the current and future state, based on a higher commander's intent, available information, and intuition. Seeing the enemy, friendly forces, and terrain in terms of time, space, and purpose form the basis of the commander's estimate."[31]

Visualization is a critical skill for the commander.[32] An important part of problem-solving, it is the building block for the commander's initial concept development and the subsequent planning actions of the staff. B.H. Liddell Hart accurately described the importance of visualization earlier this century by stating: "...the issue of battles is usually decided in the minds of the opposing commanders."[33]

The concept of battle command has once again brought the importance of visualization to the attention of the Army. Senior leaders and observer/controllers at the Combat Training Centers voice strong agreement with Hart. They

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highlight the importance of the commander's ability to visualize the operation's success.[34]

However, commanders alone do not perform visualization. Members of the staff develop visions of the operation based on their responsibilities, experience, and knowledge of the situation. These visions will not be exactly the same. Logically, to ensure battlefield success, staffs must share common elements with the commander's vision. When conflicting models of the vision are developed, different and conflicting actions may be planned or directed. A clearly communicated vision delivered early and reviewed frequently during the planning process will prevent or mitigate this problem. TRADOC Pam 525-200-1 states:

> "The staff must be an extension of the commander, see things as he does, and share his responsibility for the mission so he can reach the critical decisions with the best possible information and lead from where he can best affect the action."[35]

The Military Decision-making Process (MDMP) is used by the U.S. Army to solve tactical problems and develop military plans. The process is depicted in figure 1. Battlefield visualization is conducted throughout the Military Decision-making process. It begins with the commander's receipt of the order or information on an impending operation. During mission analysis, the commander and staff evaluate the information they have received on the operation. The commander develops a mental image of the friendly and enemy forces on the terrain in the proposed

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area of operations. The staff develops their own image of the battle as they work independently from the commander. Different images are developed by each staff member and the commander. This is a result of each individual's level of experience, the available information and their focus of evaluation and analysis.
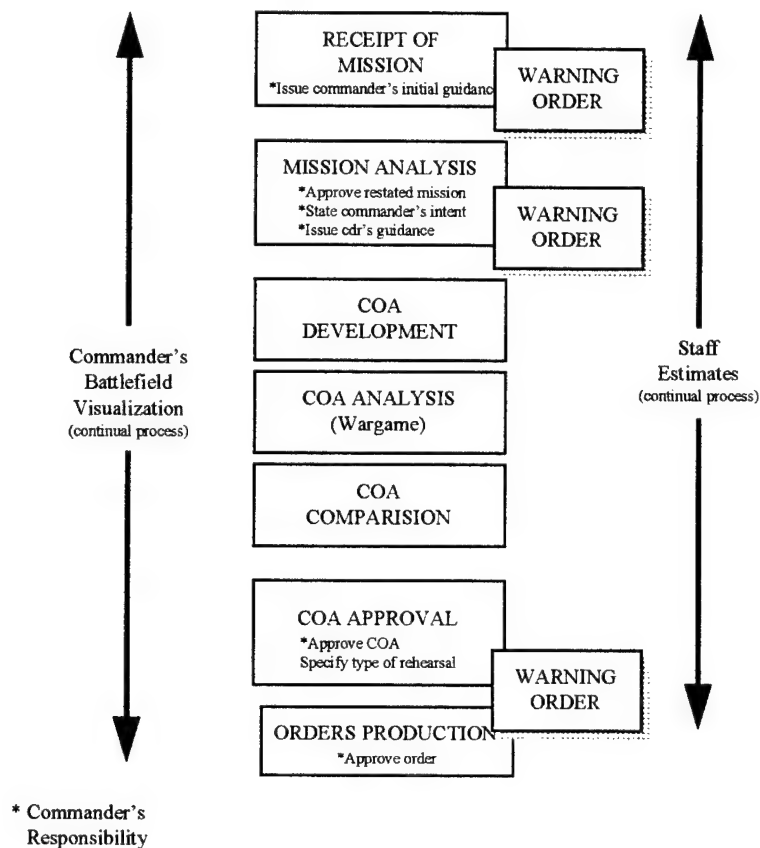
Figure 1.   The Military Decision-making Process
(FM 101-5 Final Draft, August 1996)

The commander and staff meet for a mission analysis briefing after completion of their individual estimates. The commander listens to the staff briefing and compares his image of battle with that of the staff.   Questions and

comments serve to compare and align visualizations of battle. At the conclusion of the mission analysis briefing, the commander issues his guidance. In his guidance he can transmit requirements for additional information he anticipates will be needed to further develop his own vision and support the development of battlefield contingencies. His guidance directs the staff during the subsequent steps of the planning process. Commander's guidance includes the issuance of the initial commander's intent. The commander's intent states the purpose of the operation, the selected method, and desired end state. It is "a concise expression of the commander's vision of the operation which focuses all subordinates on a common goal."[36]

Following mission analysis and the receipt of commander's planning guidance, the staff begins the development of courses of action. The commander's intent guides the staff in constructing solutions that fit the commander's vision of the battlefield.

The commander and staff wargame to analyze the various courses of action. The commander may wargame with the staff or independently depending on the situation. The wargame presents a sequential examination of battlefield actions. Wargamers identify situations expected to occur. They develop counteractions and identify the decisions that the commander must make during the battle. Each wargame presents the participants with a detailed situational model

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of the battle. They provide a common battlefield vision of the expected outcome to all participants.

When the commander does not participate with the staff in the wargame process, the staff presents their model and recommendation during a decision briefing. After making his decision, the commander states his refined intent and concept for the approved operation plan or order. The commander's intent and concept are incorporated into the operations order or plan to provide subordinate leaders with the commander's vision of the operation.

Visualization is a critical component of the MDMP. It guides the development of concepts of the operation. Wargaming is the single visualization activity that changed dramatically after the publication of the current FM 101-5 in 1984.

IV. **DOCTRINAL FOUNDATIONS**

U.S. Army decision-making doctrine is described in Field Manual 101-5, Staff Organization and Operations. Since the last publication of this manual in 1984, significant changes in Army operating procedures have developed. Operations Just Cause, Desert Shield/Storm, Restore Hope, and Joint Endeavor along with hundreds of operations at combat training centers have identified necessary changes in procedures to the planning process.

In 1993 and 1996, drafts of FM 101-5 were developed and circulated to the Army. Both attempted to define and institutionalize appropriate changes to staff operations that were appearing in practice throughout the Army. The 1993 draft was circulated and incorporated into instruction at Army schools, but did not make it to final publication. The 1996 draft was distributed in August 1996 and is expected to be published in 1997.

A review of the doctrine that provides the foundations for planning procedures begins with the latest version of FM 101-5(May 1984). The 1993 and 1996 final drafts of the manual are included to evaluate the recommended changes to planning procedures over the interim years. The decision-making process and the specific guidance for wargaming will be reviewed for each manual.

The 1984 version of FM 101-5 closely follows the long evolution of the estimate of the situation described in the historical section of the monograph. Individual estimates are developed by the commander and staff. These estimates are completed and shared during the Military Decision-making Process (MDMP) depicted in Figure 2.[37] The process leads the commander and staff through the activities necessary to determine solutions to military problems.

STAFF ACTIONS

COMMANDER'S ACTIONS

Mission Received

Information to Commander

Information to Staff

Mission Analysis, Restated Mission, and Commander's Planning Guidance
(note)

Staff Estimates

Commander's Estimate Including Decision
(note)

Preparation of Plans/Orders

Approval of Plans/Orders
(note)

Issuance of Plans/Orders

Supervision

NOTE: In time-critical situaitions, the commander may be forced to complete his estimate based on his personal knowledge of the situation and issue oral orders to his subordicate units.
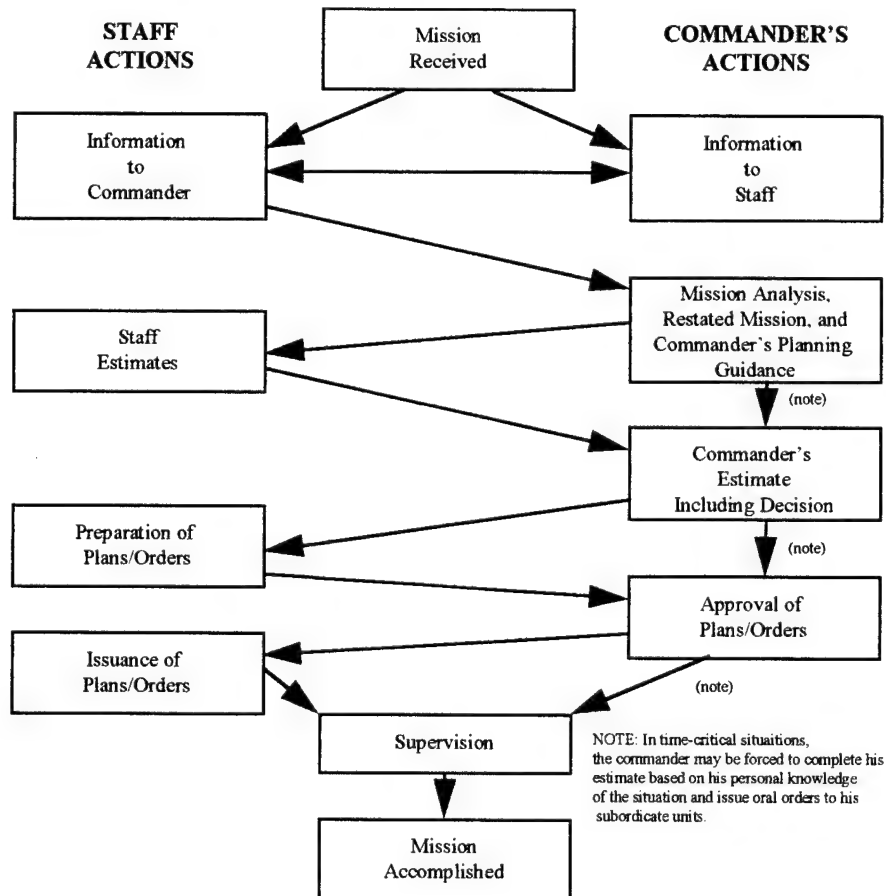
Mission Accomplished

Figure 2. The Military Decision-making Process
(FM 101-5, May 1984)

The 1984 edition places the focus of the MDMP on the commander. Staffs develop estimates in their area of expertise and responsibility to support the commander's estimate. Commanders and their staff primarily meet to exchange information and allow the continuation of estimates.

Wargaming is presented in this edition as a part of the commander's estimate. It is included in Annex E which outlines the format for the Commander's Estimate of the Situation. A sequential visualization of the actions of both sides is prescribed. Wargaming is described as a two part process. First, the commander analyzes the enemy's capabilities. Second, he analyzes each of his own possible courses of action by visualizing the sequential actions of both sides. While conducting the process, "...the commander attempts to visualize and to anticipate all possible eventualities to discover strengths and weaknesses of each course of action."[38] The wargaming process is described in detail to guide the commander through an independent analysis of each COA under consideration.

There is no discussion of the staff conducting a wargame to analyze and recommend a course of action to the commander. Nor is there a recommendation to include staff members in the commander's wargame. Staff officers are expected to independently analyze courses of action using critical factors in their area of responsibility. They then recommend the course of action that can be best supported.[39]

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The 1993 Final Draft retained the basic Military Decision-making Process (MDMP), but developed three subordinate processes: Deliberate Decision-making Process (DDMP), Combat Decision-making Process (CDMP), and the Quick Decision-making Process (QDMP). The three subordinate processes were developed to guide decision-making in differing situations as illustrated in Figure 3.[40] Commanders select the appropriate process based on the time available to complete operational planning.

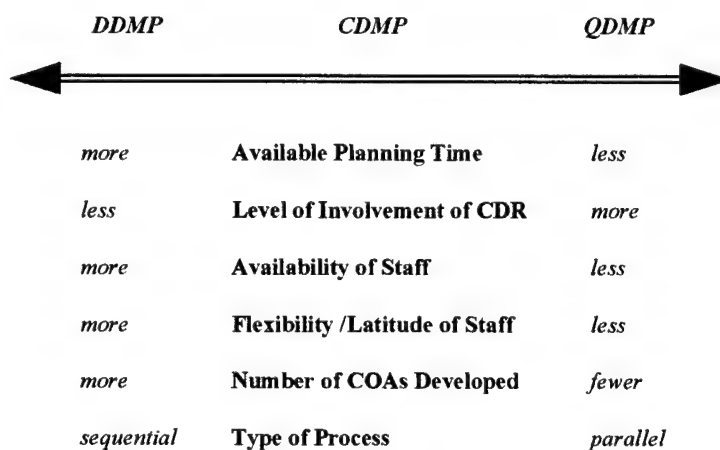| *DDMP*	*CDMP*	*QDMP*
more	**Available Planning Time**	*less*
less	**Level of Involvement of CDR**	*more*
more	**Availability of Staff**	*less*
more	**Flexibility /Latitude of Staff**	*less*
more	**Number of COAs Developed**	*fewer*
sequential	**Type of Process**	*parallel*

Figure 3. Decision-making Continuum

The Deliberate Decision-making Process (DDMP) is an evolution of the classical process outlined in the 1984 edition. It maximizes the use of the staff throughout the planning process (see Figure 4[41]). The staff participates in all steps and completes detailed analysis and briefings. In fact, the staff is the center of the DDMP. The staff

appears to use the commander's inputs similar to the way the
commander uses staff estimates in the 1984 manual.[42]

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                          ┌─────────────┐
                          │    TASK     │
   STAFF ACTIONS          │  RECEIVED   │         CDR ACTIONS
                          └─────────────┘
        ┌──────────────┐                  ┌──────────────┐
        │ INFORMATION  │◄───────────────► │ INFORMATION  │
        │   TO CDR     │◄───────────────► │  TO STAFF    │
        │(Staff Estimates)                │(Cdr's Estimate)
        └──────────────┘                  └──────────────┘
                                      ┌──────────────────┐
                                      │ MISSION ANALYSIS │
                                      │ RESTATED MISSION │
                                      │  CDR'S GUIDANCE  │
                                      └──────────────────┘
        ┌──────────────┐                  ┌──────────────┐
        │COA DEVELOPMENT│◄──────────────►│COA DEVELOPMENT│
        │ AND ANALYSIS  │◄──────────────►│ AND ANALYSIS  │
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                                          │ COA ANALYSIS │
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        │    ISSUE     │
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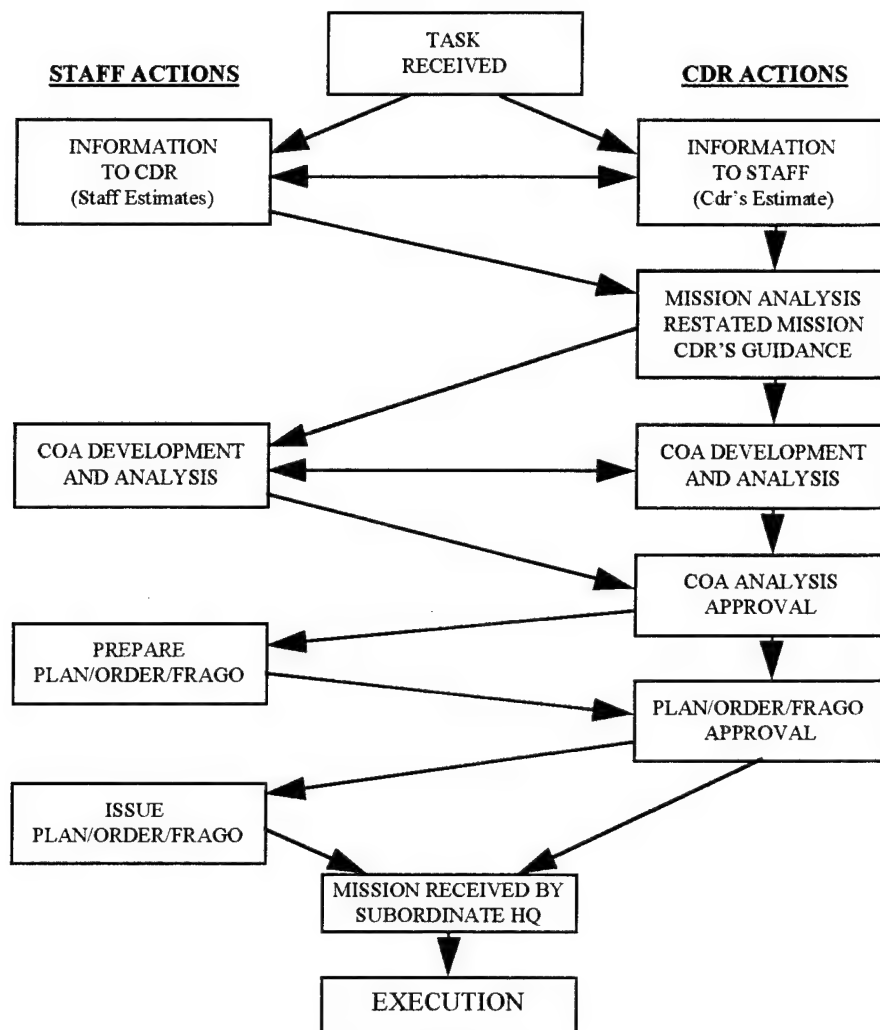
Figure 4.   The Deliberate Decision-making Process
(FM 101-5 Final Draft, August 1993)

Commander's guidance and decisions allow the staff to
complete their development of the plan. The DDMP is a very
formal process. It is the preferred process when time is
plentiful and the commander desires to take maximum
advantage of the staff's planning capability. The other two

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processes were developed for use in time-constrained environments.

The Combat Decision-making Process (CDMP) is characterized as an extension of the DDMP. Prior to the initiation of action, the DDMP was performed to develop a detailed start point for the operation. It was anticipated that the CDMP would be useful to prepare subsequent operations. The commander is expected to be more involved and drive the staff throughout the planning process. The CDMP is based on the continuous assessment of current operations to develop required plans. The commander uses knowledge of the current situation to formulate a concept of operation and direct staff work. Commanders direct the development of a single course of action against the most likely enemy course of action. Detailed mission planning and wargaming are performed to synchronize the commander's selected course of action. Commanders are more involved in this process as they limit and direct the staff's analysis and production of the plan.[43]

The Quick Decision-making Process (QDMP) describes how to rapidly make decisions during the actual conduct of the operation. The steps in the process are nearly identical to the DDMP. The uniqueness of QDMP is its informal products and lack of staff participation. The commander conducts the entire process personally with little or no input from the staff. This process is useful for the commander when

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confronted with the requirement to rapidly make an unexpected decision.[44]

The 1993 Final Draft of FM 101-5 represents a definite shift toward cooperative staff actions. This is highlighted by the significant changes in the conduct of the course of action analysis step. The staff is the focal point of wargaming in this edition. Wargaming becomes a physical event conducted primarily by the staff during the DDMP. This is radically different than the mental process conducted solely by the commander described in the 1984 manual.[45]

The 1993 Final Draft of FM 101-5 describes the wargaming process in great detail. Like the commander's process in 1984, it is a sequential visualization of battlefield actions. This draft introduces the requirement for wargaming to result in a detailed and synchronized course of action. The manual explains the process under Course of Action Analysis and Comparison as follows:

"The staff explores the commander's guidance and intent of the battle and develops synchronized courses of action, gaining realistic and detailed insights into possible events and activities.
War-gaming stimulates ideas and insights that might not otherwise occur or be discovered. It highlights important critical tasks and provides familiarity with tactical possibilities otherwise difficult to achieve."[46]

The manual states the wargaming process is a combined effort of the commander and the staff. "During wargaming, the commander and his staff consciously visualize the flow

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of battle."[47] Further, it describes one of the advantages
of the commander's participation in the wargame. "His
direct participation helps the staff get responsive and
definitive answers to the many questions which occur during
the war game."[48] However, it recognizes that the commander
may not be able to participate, and in these circumstances
delegates to the executive officer (XO), the responsibility
for leading the staff through course of action analysis.[49]

The Field Manual identifies situations where the
commander should participate in the wargame. It recommends
that the commander participate in the wargame when available
time is short and/or the staff is inexperienced. The
commander's participation under these circumstances speeds
the decision-making process. The process is shortened by
alleviating the need for a decision briefing after the
wargame. The staff does not have to brief the results of
the wargame because the commander is personally aware of the
outcome.

The commander's role, when he does participate in the
wargaming process is unclear. There is an inconsistent
description of the commander's actions in Chapter 4 (The
Military Decision-Making Process) and Appendix F (Course-of
Action Analysis and Comparison). The description of the
wargame participants in these sections of the manual changes
between paragraphs. The commander is sometimes described as
the decision maker for selection of a counteraction. In
other passages, the staff determines the counteraction.

Wargame responsibilities for the staff are included in Annex F. A description of the commander's role and responsibilities is not included.[50]

The 1993 draft retains the description of wargaming in the Commander's Estimate. The explanation is virtually unchanged from the 1984 manual. However, the emphasis on coordinated planning and staff wargaming diminishes the visibility of individual estimates.[51]

Wargaming is the most significant change in the 1993 edition. The purpose, method, and outcomes are adequately described. The wargaming process concentrates on the staff and gives a detailed explanation of their roles and responsibilities. The commander's participation is left to his discretion. His role and responsibilities in this critical event are not explained.[52]

FM 101-5 Final Draft, August 1996

The 1996 Final Draft of FM 101-5 returns to a single decision-making process. The classic Military Decision-making Process (MDMP) is the basis for all planning. There is no reference to the Deliberate Decision-making Process, the Combat Decision-making Process, or the Quick Decision-making Process as described in the 1993 draft.

The MDMP process describes the steps necessary for developing tactical solutions in all situations. This draft simplifies the conduct of planning in time constrained situations by prescribing an abbreviated MDMP. The

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commander is responsible for determining what parts of the
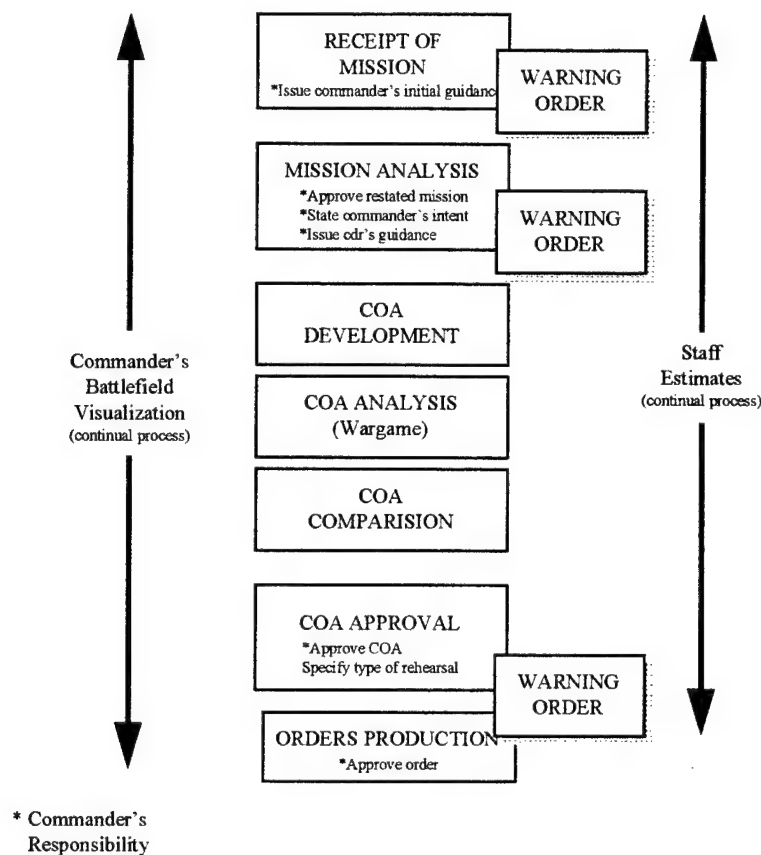MDMP to abbreviate based on the specific situation.

Figure 5. The Military Decision-making Process
(FM 101-5 Final Draft, August 1996)

The dynamics of battle command were first introduced in
the 1996 draft edition. The importance of the commander's
visualization is clearly identified by the following: "The
planning process hinges on a clear articulation of his
battlefield visualization. He is the key to
conceptualizing, planning, preparing, and executing
operations: this is his personal responsibility."[53]

The commander is directly charged with the conduct of the planning process. He determines what procedures to use and his level of interaction with the staff. This decision is based and varies with the situation. A significant difference in the commander's role in decision-making is illustrated in Figure 5[54] which appears in the draft manual. The commander's actions are described as visualization in concert with the introduction of battle command.[55]

Visualization includes many of the same activities as previously performed in estimates. However, the intent of the commander's actions are different. He is responsible for developing and sharing a vision of battle that focuses staff planning. Planning is a unified effort focused by the commander's visualization. The 1984 manual also depicted the commander as the center of planning. However, it described a process where the commander used the independent estimates of the staff to personally develop the plan.

The commander's estimate is still included in the 1996 draft. However, it is a simplified explanation of the process described in the 1984 and 1993 editions of the manual. For example, the section on course of action analysis in the 1996 version includes five bullets describing the desired outcome of each analyzed course of action. Wargaming is not mentioned as the process for performing course of action analysis. In contrast, the 1984 manual dedicated three pages to prescribing the actions required for wargaming.

Wargaming is similar to the process described in the 1993 draft. The definition has been changed to reflect the evolution in wargaming methods. The description illustrates the normalization of the process:

> "The wargame is a disciplined process with rules and steps which attempts to visualize the flow of battle, given friendly dispositions, strengths, and weaknesses; enemy assets and probable COAs; and the characteristics of the area of operations."[56]

The purposes, methods, and participants are the same as those described in the 1993 draft. The staff is included in all discussions of the wargaming process. The commander is frequently included, but still has no prescribed role or responsibilities. Numerous paragraphs discuss the benefits of his participation or observation of the process. However, the draft fails to clearly delineate the actions of the commander during the process.[57]

The 1993 and 1996 drafts lists seven ways that wargaming helps the commander and staff. One of those is: "Have as near an identical vision of the battle as possible."[58] This statement clearly distinguishes the important contribution that wargaming makes to the development of common vision. However, the wargaming process can only align the vision of those that participate. When the commander and staff wargame separately, the alignment of vision must be accomplished through a sequenced review of the process performed by the staff. This review could be considered another iteration of wargaming.

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V. ANALYSIS

Battle command was introduced to change the way the Army looks at battlefield leadership. Its definitions and dynamics emphasize the art of command rather than science. In this way, battle command recognizes the commander's personal influence on the battlefield. Its two components, leadership and decision-making, are uniquely applied by each commander. Because battlefield commanders have many competing demands for their time, many opportunities for the commander to influence the current and future success of the unit occur simultaneously. Logically, the commander can not take advantage of all these opportunities and must decide where and when he can best influence the unit's actions.

The commander is the nucleus of the planning process and provides critical guidance to focus staff planning. Battle command doctrine requires the commander to visualize and communicate the concept and end state for each operation. Colonel Rosenberger, a former Senior Brigade Trainer at the National Training Center emphasized this imperative:

> "A commander, not his staff, must fight and win the battle in his mind before he can hope to win it on the ground. He is the architect of victory or defeat. Further, he must effectively communicate this mental blueprint to his staff, ensure the planning process sets conditions to accomplish his intent and check to ensure conditions are met."[59]

Common vision is a requirement for effective operations.

Staffs must be fully integrated into the Battle Command System. They must have a shared vision of what must be accomplished.[60] Members of a military unit must share understanding of the battlefield to develop integrated and complimentary operations in their complex environment. Battlefield actions can not be expected to gain maximum effect without common vision. Subordinate commanders and staff officers can not effectively support the operation or exercise initiative without an appreciation and understanding of the commander's vision.

> "The staff must be an extension of the commander, see things as he does and share his responsibility for the mission so he can reach the critical decisions with the best possible information and lead from where he can best affect the action."[61]

A military unit's common vision must mirror the commander's vision. The commander's vision is the reference for all battlefield decisions. Consequently, staffs design a detailed plan to support the commander's vision in order to maximize the effects of battlefield systems.

The commander's intent and planning guidance provide the necessary vision for development of supportive courses of action. Commander's refine and communicate their vision by participating in planning activities and interacting with members of the staff. Frequent communication with the

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commander improves the staff's ability to understand and support the commander's visualization. General Franks highlighted this communication in a recent article on battle command with:

> "During staff sessions, it does not hurt to "think out loud," another technique I learned from General Cavazos, because this helps the staff understand how you are approaching a problem and what information you find helpful."[62]

The staff must understand the commander's vision of battle in order to develop complimentary tasks and orders.

Commander's intent is not enough.

Clear intent and guidance provide a staff the requisite information to initiate planning. However, even with clear guidance, it is difficult for the staff to accomplish the required detailed planning without the same vision of battle as the commander. As the staff wargames the expected and sequenced battlefield actions, they will inevitably come to points where they must determine the expected response or decision of the commander for that situation. It is difficult for the staff to consistently predict the actions of the commander and anticipate his decisions. The staff will likely misunderstand the commander's information requirements and arrive at a different decision. Consequently, the commander and staff construct two different visions of the fight. The staff's detailed solution and recommended battlefield decisions will likely

not support the commander's vision of battle. To truly develop an integrated plan of decision support useful to the commander, there must be communication. Without agreement on how they see the battlefield, what the decisions will be, and what is the required information, the staff's detailed plan and the commander's vision will not be synchronized. This flaw is readily apparent when units attempt to rehearse the plan.[63]

The commander and staff find themselves in conflict when they have not wargamed critical events together before publishing the order. Commanders find aspects of the staff's plan that clearly are built on a vision different from their own. These rehearsals degrade into impromtu planning sessions as the commander and staff try to eliminate confusion and publish instructions that resolve the conflict with the commander's vision of battle. The rehearsal becomes a overdue visualization of battle using many of the same techniques as wargaming.

Wargaming is an essential visualization tool.

Wargaming is the visualization tool that allows participants to construct a detailed model of the operation. Ideally, courses of action are prepared in great detail using the common vision of battle developed in the wargame. During the wargame, participants are required to make further decisions on their vision of battle. They must determine the sequence and the outcome for each battlefield

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event and action. All participants can see the model of the battle develop. They develop a common vision of battle by discussing the interaction of forces, and making decisions on the outcome of battlefield actions.

Wargaming integrates the actions of the entire unit. It helps the commander determine what decisions must be made and identifies the critical information needed to make those decisions.[64] Staffs develop better synchronized courses of action when the entire staff is involved in wargaming.[65] They are better able to coordinate their supporting actions when all are simultaneously considering the same conditions and situation.

> "Wargaming is not limited to a specific step during the planning process. During the initial stages of concept development, wargaming is used to generate and quickly evaluate possible courses of action. After a course of action is designated, wargaming is used by staff members to develop specific parts of the plan in detail."[66]

Wargaming can be used for different purposes. It can be used to evaluate or analyze the strengths and weaknesses of a course of action, develop a detailed and synchronized plan, or rehearse an operation. Visualization of the sequenced interaction of forces on the terrain is performed to support each of these activities.

Commanders must participate in wargaming.

The commander is the primary decision maker during all
phases of the operation. He drives the Military Decision-
making Process to support his requirements for analysis and
decisions.[67] The commander must be deeply involved in
critical parts of the process to make planning decisions and
guide the staff.[68] The commander must determine when to
participate and balance the other simultaneous demands for
his leadership.

Historically, the commander developed an estimate
separate from the staff.[69] He met with the staff to gather
needed information to further develop his estimate, and give
planning guidance to the staff. The commander prepared an
estimate that included courses of action. Wargaming,
performed solely by the commander, was a means to conduct
analysis of the courses of action. The simple and clear
description of wargaming in the 1984 edition left no doubt
as to the role and responsibility of the commander.[70] The
introduction of the 1993 draft shifted the responsibility of
course of action development and course of action analysis
to the staff.[71] The commander was given the flexibility to
determine his level of participation in these two steps.
Consequently, the wargaming process conducted during course
of action analysis rarely includes the commander.

Commanders are not adequately involved in wargaming.

Commanders are inadequately involved in critical points of the Military Decision-making Process.[72] They are not involved in wargaming when the staff visualizes the battle in detail and synchronizes battlefield decisions.[73] Without this participation, the staff develops a plan based on their independently developed vision of battle.

Commanders are deeply involved in guiding the staff from mission analysis to course of action development.[74] They give planning guidance that includes their intent to the staff. This gives the staff a general concept of how the commander sees the operation and how to solve the tactical problem.

Commanders return to the planning process after course of action analysis to receive the staff's decision brief and approve the plan or order.[75] They actively interact with the staff to gain an understanding of the analysis, then select a course of action, and approve the plan or order to be executed. Between the issuance of planning guidance and the decision brief, the staff conducts extensive course of action development and analysis and constructs a vision of the operation. Course of action analysis is a critical step in the planning process. It is where the unit's actions are synchronized. It also determines those decisions that must be reserved for the commander during the upcoming battle.[76]

The commander is frequently not involved in the wargaming process conducted during the course of action analysis step. In these instances, the staff is required to identify the commander's battlefield decisions for given circumstances. Decision points are identified for the staff's expected battle, not the commander's vision of the expected battle.[77]

Observations from the Combat Training Centers are collected by the Center for Army Lessons Learned (CALL). These observations describe trends in unit performance and identify recurring weaknesses as well as successful techniques demonstrated at the CTCs. CALL disseminates their findings to the Army via newsletters and bulletins.

A significant observation by CALL is the lack of commander involvement in the planning process. Two significant trends have been identified. First, commanders are regularly not involved in the wargaming process.[78] Second, commanders spend time fixing problems attributed to poor procedures and planning.[79] There is a likely relationship between the two negative trends identified by CALL. Commander participation in wargaming would strengthen common vision and reduce conflict between staff developed orders and the commander's vision of the battle.

Commander's do not understand their wargaming role.

The difficulty in developing a common vision of the expected battlefield is an outgrowth of inadequate

involvement of the commander in the Military Decision-making Process. In order for commanders and staffs to develop similar models and produce complimentary tasks, they must spend time together to ensure that they develop the same vision of the operation. U.S. Army doctrine provides specific guidance for the commander at the outset of planning.[80] Commanders fully understand the requirements of providing guidance and selecting a course of action. FM 101-5 does not give a clear description of the commander's role in wargaming. This deficiency has led to a lack of command involvement in this critical part of the MDMP.

Doctrine gives unclear guidance for wargaming to commanders.

FM 101-5 does not clearly state the role of the commander during each step of the planning process. The 1984 edition no longer supports the process as it is being used in the Army today.[81] The commander and staff no longer prepare estimates and plan independently.[82] Tactical staffs now have the responsibility for developing and analyzing courses of action. The 1993 and 1996 drafts reflect the increased integration of the staff in the wargame process, but provide little guidance for the commander in that process.[83]

There is no description of the commander's critical planning events. The 1996 draft changed the commander's actions throughout the MDMP from estimate development to visualization.[84] However, it does not describe the key

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visualization activities and how he contributes throughout the MDMP. Many commanders recognize the need for additional guidance concerning their role. Wargaming is a key visualization event in the MDMP yet the doctrine lacks a clear delineation of the commander's role in this critical step.

VI. CONCLUSIONS

Wargaming can take different forms based on its intended purpose.

The original purpose of wargaming was to analyze the relative advantages/disadvantages of each course of action and select a course of action for execution.[85] Wargames are now also used to develop detailed and synchronized plans.[86] Planning can involve the use of one or more wargames to meet each purpose. The initial wargame (used to analyze the course of action) must be conducted before a decision is made. The subsequent wargames (used to synchronize the operation and integrate the commander's decisions) can occur either before or after the decision brief. They must, however, be conducted before the order is published.[87]

Commanders and staff must wargame together to achieve common vision of the fight.

Identifying and solving problems together can greatly enhance the product. If commanders and staffs are to integrate or synchronize the detailed decisions and activities of the complex battlefield then they must have the same image of battle.[88] This image must be constructed during wargaming.

Wargaming together and communicating effectively produce a shared vision for all participants involved in the MDMP. If wargaming is conducted separately, different

images of the sequenced actions develop. This leads to reduced effects of battlefield systems or actions.

Necessary to the synchronization of these actions is the alignment of the battlefield visions of their designers. This can only be achieved by a sequenced review of the expected battlefield actions or situations. Consequently, the staff and commander must conduct some form of wargame together to arrive at a common understanding of the battlefield.

The staff cannot adequately support the commander's decision making without seeing the same battlefield as the commander. The staff will plan the employment of battlefield systems that do not fit the commander's view of the battlefield. What will likely follow is a confused group of subordinate commanders who have received conflicting instructions or directives from both the commander and the staff. The unit will not be able to rehearse and be forced to wargame the operation. Wargaming is the tool to merge the visions of the commander, staff and subordinate leaders.

Participation of the commander is especially necessary when planning time is short.[89] There may not be time for the staff to present a decision brief and explain the wargame results during an abbreviated planning process. Conducting a single wargame with the staff may be the only way to gain a common view of the battlefield.

When more decision time is available, the commander and staff can afford to integrate their battlefield images and actions after the decision brief. The commander may decide to not attend the course of action analysis wargame in these circumstances. However, he must understand if course of action analysis is not conducted together, some sort of wargame will inevitably be conducted later to align the commander's and staff's visions of the operation.

FM 101-5 does not support the development of a common vision.

Doctrine clearly states the desired techniques and outcomes of wargaming.[90] The 1993 and 1996 drafts of FM 101-5 adequately describes the roles and responsibilities of the primary staff participants. In fact, the staff role is central to the wargaming process. Doctrine fails to describe the role of the commander. The commander is no longer designated as an essential participant. His role or contribution to the process is vague. The commander is left to determine his own part in wargaming.

The commander must participate in wargaming to develop and share his vision of battle. The staff develops a different vision of the operation when they wargame independently. The commander attends the wargame to ensure a common vision of the operation. He identifies decisions he expects to make during the operation and describes them to the staff. This allows the staff to understand how the

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commander will orchestrate battlefield actions, and synchronize supporting information and activities.

VII. SUMMARY

The purpose and nature of wargaming has changed in the
U.S. Army over the last twelve years. Previously, it was a
process used solely to select a course of action. Wargaming
is now used to synchronize battlefield actions. The most
critical outcome of wargaming is the identification of the
decisions that the commander must make during the course of
a battle. Without the commander's presence during this
process, the staff must rely on its knowledge of how the
commander sees the battlefield and how he uses his available
assets. Warfighting styles and personality are difficult to
learn under the best of circumstances. It is even more
difficult given rapid personnel turnover and limited
tactical training.

Commander's intent has brought the Army a long way in
understanding the commander's initial and general vision of
battle. However, it does not describe the detailed
expectations that are needed to synchronize assets and
develop decisions. To develop a common vision of the
battle, the commander and staff must look at the operation
together and sequentially. Only wargaming allows this
process to occur. It is necessary if the staff is to develop
a cohesive and synchronized plan. Without the commander's
participation in wargaming, the staff will incorrectly
identify decisions, confuse subordinates, and publish a plan
that will require subsequent modification.

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ENDNOTES

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[10] GEN Frederick M. Franks Jr., "Battle Command: A Commander's Perspective," Military Review 76, no. 3 (May-June 1996): 4.

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[15] Rex R. Michel, Historical Development of the Estimate of the Situation, Research Report 1577, (Fort Leavenworth: U.S. Army Research Institute for the Behavioral and Social Sciences, October 1990), 3.

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[22] The publication dates for FM 101-5 are 1932, 1940, 1950, 1954, 1960, 1968, 1972, 1982, and 1984.

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[40] Center For Army Lessons Learned (CALL) Newsletter 95-12, Tactical Decision Making: "Abbreviated Planning" (Fort Leavenworth: Center for Army Lessons Learned), I-4.

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[43] FM 101-5, Command and Control for Commanders and Staff, Final Draft 1993, 4-44.

[44] Ibid., 4-52 to 4-53.

[45] FM 101-5, Staff Organization and Operations, 1984, E-6 to E-7.

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[47] Ibid., F-3.

[48] Ibid., F-2.

[49] Ibid., F-3.

[50] Ibid., F-24 to F-29.

[51] Ibid., 4-26 to 4-33.

[52] FM 101-5, <u>Command and Control for Commanders and Staff</u>, Final Draft 1993, F-24.

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[54] Ibid., 5-2.

[55] Ibid., 5-7.

[56] Ibid., 5-27.

[57] Ibid., 5-27 to 5-28.

[58] Ibid., 5-27.

[59] COL John D. Rosenberger, "Coaching the Art of Battle Command," <u>Military Review</u> 76, no. 3 (May-June 1996) 33.

[60] TRADOC Pamphlet 525-200-1, <u>Battle Command: Battle Dynamic Concept</u>, 14.

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[62] Franks, "Battle Command: A Commander's Perspective," 25.

[63] I observed approximately sixty rehearsals while serving as an observer/controller at the National Training Center from 1991 to 1993. Commanders, staff members , and subordinate leaders regularly identified conflict between the operations order developed by the staff and the commander's vision. Conflicts arose from the different visions held by the commander and staff during planning.

[64] TRADOC Pamphlet 525-200-1, <u>Battle Command: Battle Dynamic Concept</u>, 11.

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[73] I served as an observer/controller at the National Training Center from 1991-1993, and at the Battle Command Training Program in 1995. I estimate that 10-15% of the approximate ninety-five wargame sessions I observed included the commander.

[74] Center For Army Lessons Learned (CALL), Joint Readiness Training Center Trends Fourth Quarter FY95/ First Quarter FY96; available from http://call.army.mil:1100/call/ctc-bull/jrtc4196/sec2ta4.htm#2; Internet; accessed 22 Nov 96.

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[77] 10-15% of the 95 wargames I have observed included the commander (see note 71). The commander normally visited subordinate leaders, conducted an independent wargame, or slept during the staff's wargame.

[78] Fallesen, Overview of Army Tactical Planning Performance Research, 15.

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[85] FM 101-5, <u>Staff Organization and Operations</u>, 1984, E-5 to E-7.

[86] Center For Army Lessons Learned (CALL), <u>National Training Center Priority Trends 4QFY94 through 2QFY96</u>; available from http://call.army.mil:1100/call/ctc-bull/ntc96/pri/sec-nila,htm#10; Internet; accessed 22 Nov 96.

[87] FM 101-5, <u>Staff Organization and Operations</u>, Final Draft 1996, 5-26 to 5-27.

[88] CALL Newsletter 95-12, <u>Tactical Decision Making: "Abbreviated Planning"</u>, III-9 to III-10.

[89] Ibid., IV-4 to IV-5.

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